

# The Devil's Century

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Our present generation is living out of the spiritually vacuous philosophies of modernism and post-modernism, the cancerous ideologies of free-market economics and unrestrained economic growth, and the corporate and political tyrannies that have nurtured an energised ethos of transience. The triumphalism of modernity has effectively wiped from our collective memories a coherent view of just what has gone down in the flourish and flash of the twentieth century. The immensity of human misery and the degree of cultural waste wrought over the past century are almost beyond comprehension.

We have succeeded in erasing from our memories the terrible crimes of Hiroshima and Nagasaki. We have similarly glossed over the outpouring of vast torrents of radioactive elements into the earth's atmosphere. Every living human being now carries radioactive elements in their bodies as a result of the 520 atmospheric nuclear tests - with an explosive power equivalent to 29,000 Hiroshima bombs - that were conducted between 1945 and 1980. We also choose to ignore the insidious infiltration of radioactive elements throughout the biosphere from every stage of the nuclear cycle, from the mining and processing of uranium to the routine ventings of nuclear power plants. And despite the global dispersal of a devil's brew of long-lived radionuclides from the catastrophic accidents at Chelyabinsk, Chernobyl and more recently Fukushima, our technocratic minders and their political pawns continue to steer public opinion towards the embrace of a salvific nuclear renaissance that will put to rest all nasty prospects of runaway climate change.

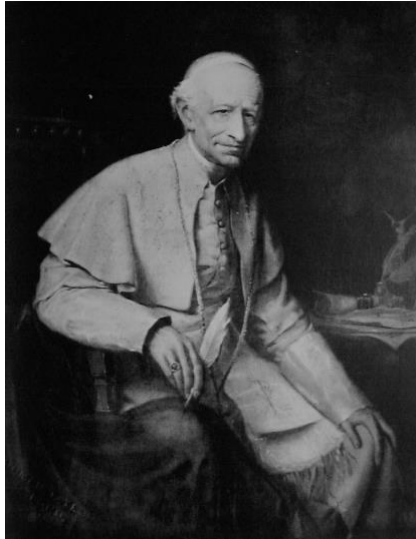
One does not need an overheated imagination to conclude that the past century has been in the thrall of demonic forces that have strangely subverted our capacity for thoughtful evaluation and corrective restraint. Having witnessed the holocaust of the so-called Great War, William Butler Yeats wrote in 1919:

*Things fall apart; the centre cannot hold;  
Mere anarchy is loosed upon the world.  
The blood-dimmed tide is loosed, and everywhere*

*The ceremony of innocence is drowned;  
The best lack all conviction, while the worst  
Are full of passionate intensity.*

A century later, some things seem not to have changed at all. . . .

### **Echoes from a Cathedral**



There is a story told in certain circles that offers an unusual perspective regarding the nature of the forces unleashed on the world during the twentieth century: After celebrating a morning mass in 1884, Pope Leo XIII attended a Mass of Thanksgiving, as was his practice. At a certain point, he lifted his head and began to look steadily towards the altar. He was staring motionlessly without batting an eye. His expression alternated between horror and awe and the appearance of his face was alternately flushed and pale. He seemed completely overtaken by what he was experiencing. As his facial colour returned and he became more settled, he rose from his seat and went straight to his office without speaking to anybody or giving any indication of what he had just experienced.

When he emerged half an hour later, Pope Leo handed his secretary a newly composed prayer to Saint Michael with instructions that it was thenceforth to be read in Catholic churches after every mass. This practice commenced soon after and continued for many decades. It was abandoned only after the reforms of Vatican II during the 1960s.

Pope Leo later described how during the time of his entrancement, he had heard two voices emanating from the tabernacle. One was a deep guttural voice that boasted that he could destroy the Church if given enough time and power. A strong but gentle voice replied asking how much time and how much power was needed. The other said that a century would be sufficient but that he needed greater power over those whose service he could avail himself of. Pope Leo then heard the reply: "You have the time. You will have the power. Do with them what you will."

The twentieth century has in fact seen not only the destruction of much within the Catholic Church that was held sacrosanct during the time of Pope Leo who held office from 1878 to 1903, but the unleashing of destructive forces on a scale never before witnessed on the earth.

### **Leviathan Awakens**

The decades following Pope Leo's vision saw a consolidation and expansion of the new powers that the industrial revolution had spawned. But the high intelligence that brought forth the many innovations of the time carried its own dark shadow as an unshakeable companion. There were some with prescience who descried the oppression that lay hidden within emerging industrial developments. Among the first were the romantic poets who lamented the destruction of the natural world that invariably accompanied urban and industrial expansion. As early as the first decade of the nineteenth century, William Blake

had envisioned the new forms of enslavement and the forfeitures of freedom that lay in wait in the nascent industrialism revealed by the *dark satanic mills* of Georgian England.

The development of new industrial methods of production enabled the exploitation of coal reserves, mineral deposits, and newly discovered petroleum fields on a hitherto unimagined scale. They gave rise to new dynasties of immense wealth and power. As factories began to proliferate, vast numbers of people found themselves subjected to lives of bondage in servitude to the Machine. In the United States, Andrew Carnegie's steelworks poured out thousands of kilometres of railway tracks that carried coal-fired locomotives and their heavy cargoes to all parts of a newly opened continent. Rockefeller's Standard Oil Company drew forth the energy-rich black blood stored in ancient forests that had been hidden within the earth. Crude oil was progressively fractionated and manipulated by a new class of chemists to produce fuels and lubricants for internal combustion engines, fertilisers for agriculture, explosives for military and industrial use, and the building blocks of powerful new drugs that would completely alter the way medicine was practised.

That creativity was, however, shadowed by a destructive aspect of equal magnitude. This was made manifest in its tragic fullness during World War I that raged from 1914 to 1918. During those four years, some 17 million people died violently and a further 20 million were wounded. Even greater numbers of those who were not killed by bullets, mortars, bombs or chemical weapons were later taken out by the influenza pandemic of 1918.



Never before in the history of humanity had so much metal been used to such destructive purpose. Never before had such explosive power been so catastrophically released. Never before had so many young and old men in uniform been mobilised over such vast distances. Never before had so many people been destroyed in such numbers by fellow human beings. Yet the experience of World War I proved to be but a prelude to the far greater devastation that erupted a short 21

years later culminating in the detonation of two atomic bombs over the Japanese cities of Hiroshima and Nagasaki in August 1945.

The dual nature of modernism had revealed its extremity.

### **Lengthening Shadows**

The Great War was but a first manifestation of the unleashing of the prodigious powers and capabilities that would come to dominate the twentieth century. These powers found expression in virtually all domains of human endeavour - economic management, political ideology and methods of social control, mineral extraction and utilisation, electricity generation and supply, and ways of land, air and maritime transport. The ingenuity and brilliance embodied in these developments were, however, accompanied step by step by forces that darkened all the visionary rhetoric promising the arrival of a new golden age, a Tomorrowland of prosperity, freedom and happiness for all.

The opposing ideologies of capitalism and communism began to crystallise, the one marked by a philosophy and practice of unrestrained privately-owned production and a similarly unrestrained consumption, the other by a forfeiture of private property and the creation of state-owned enterprises built on totalitarian methods of social and political control. By the late 1920s, the seeds had been sown for a massive collapse in the economies of both the United States and Europe. By the early 1930s, millions of workers and tens of thousands of financial institutions in the so-called free world had been brought to ruin by the Great Depression.

The Soviet Union was declared by Vladimir Lenin in 1922. When he died two years later, Joseph Stalin consolidated his own power and outmanoeuvred his opponents to become supreme dictator by the late 1920s. Vast tracts of agricultural land were seized by the State and millions were imprisoned in an archipelago of labour camps. Stalin's suppression of all opposition in Ukraine was merciless. During the years 1932 and 1933, between five and seven million Ukrainians - half of whom were children - were knowingly and systematically starved to death.

Meanwhile, Adolph Hitler's rise to power had become irresistible, fuelled as it was by the growing resentment of a German people who had been subjected to regional dismemberment, economic degradation, and deep humiliation by the Treaty of Versailles imposed in 1919.

Yet the party rolled on. America and Europe recovered, the Soviet Union continued to gain in power, and Germany became increasingly militarised. By the time World War II erupted in 1939, the machinery to both create and deploy technologies of destruction on an immense scale was fully in place. Under Hitler, entire populations were herded into mechanised death camps. Aerial warfare enabled the enactment of a totally new level of devastation. In the latter stages of the war, this power was directed to the complete destruction by fire of entire cities as occurred in Hamburg in July 1943, Dresden in February 1945, and Tokyo in March 1945.

The deadliest fruit that ripened on the flaming tree of war was, however, that born of the Manhattan Project. In the final furious exhalation of hellfire that drew the curtain down on World War II, 70,000 human lives were vaporised in just 4 seconds after *Fat Man*, a single bomb carrying four kilograms of plutonium, exploded above the city of Nagasaki on August 9th, 1945.

## Opening the Portals



Uranium was discovered in the late 1700s. It took another century before the element had revealed its hidden fire to the French physicist Henri Becquerel in 1896. Becquerel discovered that salts of uranium not only glowed in the dark but darkened photographic plates when placed in contact with them. He concluded that the salts emitted some form of radiation. Ernest Rutherford also worked with uranium, and by 1911 had established the atomic structure of matter. He also discovered that

certain elements were inherently unstable and underwent radioactive transformations into

other elements. Within eight years, Rutherford succeeded in replicating these transformations by bombarding a range of elements with alpha particles, one of the three forms of radiation emitted by uranium. By the mid 1920s, particle accelerators had appeared on the scene and made easier the manipulation of atomic nuclei in the laboratory.

In 1934, it occurred to the Italian physicist Enrico Fermi that bombarding uranium with neutrons might create heavier atoms by the capture and transformation of the neutrons in the nucleus of uranium atoms. His hunch eventually proved to be correct. Others who were conducting similar experiments observed that neutron bombardment of uranium atoms could also produce highly radioactive smaller atoms that were approximately half the size of uranium atoms. It was soon understood that uranium was capable of undergoing fission, of breaking into smaller radioactive fragments, when its nuclei absorbed neutrons.

Building on these developments, Fermi constructed a nuclear pile at the University of Chicago in order to generate such reactions on a massive scale. On the first day of December 1942, Fermi succeeded in igniting a controlled chain reaction. The mix of fast and slow neutrons that were produced not only tore atoms apart, but created the new litany of man-made elements - including plutonium - that Fermi had predicted eight years earlier. Four weeks later, on the 28th December 1942, President Roosevelt authorised the Manhattan Project.

The portals of the nuclear abyss were thus thrown open.

### **The Violent Century**

One of the key signatures of industrial/technological civilisation has been its willingness to exercise an ever-increasing violence in the pursuit of its aims. That violence has been made shockingly manifest in the wars conducted over the past century. Seventeen million people died violently during World War I. By the time World War II was drawing to a close, sixty million people - some 3% of the world's population - had been killed since the start of the war. In the short period between the two wars, the instruments of death had changed from bullets and mortars to air-borne bombs and rockets. The final act of infamy was the killing of over 200,000 Japanese people by two nuclear explosions in August 1945.

Within twenty years of the atomic flaying in Japan, the United States had constructed over 31,000 nuclear weapons. And by 1985, the Soviet Union possessed over 39,000 nuclear weapons. This feast of hubristic insanity and excess was made possible by the generation of enormous amounts of plutonium in nuclear reactors. That flush of nuclear militarism began to subside once the implications came to be more widely known. The present time has seen some small retreat. According to the Union of Concerned Scientists, close to 13,000 nuclear weapons continue to grace the arsenals of nine nations.

Nuclear reactors themselves are another story. There are some 440 operational nuclear power plants in 31 countries. Over 60 new reactors are under construction. According to the World Nuclear Association, around 220,000 tons of highly radioactive spent fuel rods are presently immersed in cooling ponds around the world. An additional 25,000 tons are stored in dry casks.

Thousands of tons of new high-level wastes continue to be produced by existing nuclear reactors each year. Meanwhile, the shadowy supporters of the nuclear project cheerfully champion an increasingly nuclearised future.



The shattering of atoms, whether cataclysmically in nuclear bombs or in controlled chain reactions within nuclear power plants is an inherently violent act. That violence is itself the end of a sequence of violence that begins with the extraction of uranium from the earth. Violence is inflicted on the many indigenous peoples whose ways of life and whose health and safety have been over-ridden by governments and

mining companies determined to draw forth the power and wealth hidden within uranium ores. That violence continues to simmer in the seething nuclear wastes that litter the hinterlands of Canada, the United States, Kazakhstan, Nigeria, Namibia, South Africa, Jharkhand, and Australia among other places. That same violence is silently experienced by the millions of people throughout the world who contend with the debilitating and often lethal effects of the assimilation into their bodies of radioactive elements released by atmospheric tests, nuclear accidents, and the slow bleed of radionuclides into the lands, airs and waters of the earth through the mining of uranium and from the operation of nuclear reactors.

Successive posts will progressively reveal the many faces of the nuclear project during this time when the forces of nature begin to return the violence that has been exercised so recklessly against the earth and her creatures for so long.

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